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(6) WIND TEST REPORT
FOR THE
AN/TRN-41 TACAN NAVIGATIONAL SET

(12) 19p.

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AN/TRN-41 TACAN NAVIGATIONAL SET

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Wind Test Report for the Navigational Set, TACAN, AN/TRN-41.

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SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

WIND TEST REPORT

for the

NAVIGATIONAL SET, TACAN, AN/TRN-41

This report describes the wind test as defined in the Equipment Test Plan for Navigational Set, TACAN, AN/TRN-41, 131500-415.

1. Test Identification. Wind test as defined in Appendix IV-J (wind test procedure) of the Equipment Test Plan for Navigational Set, TACAN, AN/TRN-41.

2. Functional Purpose of Test. This test forms a part of the AN/TRN-41 system qualification tests.

3. Test Objectives. To demonstrate that the AN/TRN-41 will meet the wind requirements of paragraphs 3.2.5.1.9 and 4.2.1.4.3.10 of Specification No. 404L-701-5017A, Part 1 of 2 parts (20 August 1976).

4. Description of Test Article. The AN/TRN-41 system consisting of the following was used for the tests:

Receiver-Transmitter	RT-1202/T
Antenna	AS-3132/T
Antenna Support	AB-1237/T
Filter, DC Power	F-1439/T
Interconnecting Cables	

5. Summary of Test Results. The AN/TRN-41 showed no functional or physical degradation during the wind test.

6. Description of Test Facilities and Procedures. The test facilities and test procedures are described in Appendix IV-J of the Equipment Test Plan.

7. Test Setup Diagrams. The test setup diagrams are provided in Appendix IV-J of the Equipment Test Plan.

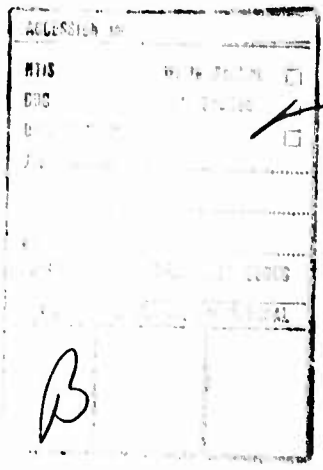
8. Test equipment. See Attachment 1 for test equipment used for the wind test and the pre-test, test, and post-test operational tests.

9. Test Data. Attachment 2 contains the data sheets for the wind test, and the pre-test, and post-test operational tests.

10. Test Conditions. The system was tested with a wind of 50 knots across the operating system at the ambient temperature.

11. Test Results Analysis. Comparison of the pre-test and post-test operational data and the visual inspection showed no functional or physical degradation of the system during the wind test.

12. Certification. The data sheets shown in Attachment 2 have been signed by a Montek Quality Assurance representative and a DCAS representative, certifying that the test results are authentic, accurate, current and in accordance with the related test plan.



ATTACHMENT 1

TEST EQUIPMENT

TEST EQUIPMENT

Description/Manufacturer	Model	Calibration Due Date
Oscilloscope, Tektronix	465	7/6/77
Signal Generator, RF, H.P	612A	6/23/77
Peak Power Meter, Boonton S/N B-463	8900B	9/19/77
Pulse Generator, Data Pulse	110B	5/12/77
Counter, Fluke	1953	8/12/77
Half-Ampl. Det. Montek	131500-702	N/A
RF Detector, Montek	135203-100	N/A
Monitor Ant., Montek	006300	N/A
Test Box - Interconnection - Montek	131500-703	N/A
Power Supply HP	6274B	1/16/78
Power Supply Acopian		12/9/77
Power Supply, Sorensen	QR4075A	9/19/77
Directional Coupler 20 dB, Narda	3042B	N/A
Directional Coupler 10 dB, Microlab	CBA-78	N/A
Variable Attenuator, Weinschel 0-10 dB	CBA-78	N/A
Variable Attenuator, Weinschel 0-10 dB	905	N/A
RF Attenuator, Weinschel	10 dB	N/A
Multimeter, Fluke	8120A	8/2/77
Aircraft, Beachcraft	Bonanza	N/A
Velocity, Multimeter, Datameter	800TP	12/12/77

ATTACHMENT 2

DATA SHEETS

APPENDIX IV-K

DATA SHEET
ENVIRONMENTAL TEST

TEST Wind

SYSTEM 003

DATE from 9 May 1977 to 9 May 1977

ACCEPTABLE X

NOT ACCEPTABLE

REMARKS At the conclusion of the wind test, the system operated normally. There was no degradation in performance based on comparison of test data. No discrepancies were noted.

DISCREPANCIES

SIGN OFF INFORMATION

ENVIRONMENTAL TEST ENGINEER ____ DATE ____

REPRESENTATIVE ENGINEER [signature] DATE 5/11/77

QA REPRESENTATIVE [signature] DATE 5/11/77

DCASD OR AF CONCURRENCE [signature] DATE 5-11-77

June 30, 1976

DATA SHEET

OPERATIONAL TESTS

AN/TRN-41

Test WIND

System 003

Date 5/9/77

Time 2:00 PM

Tech

Para. No.	Description	5/9/77 Pre Test mbl	5/10/77 Post Test mbl	~~Post~~ Test	Requirements	Units
6.1	Calibrated RF insertion loss P_L = 31.2 dB Used in determining RF peak power.	N/A	N/A	N/A	N/A	N/A
6.2	System turn on normal operation	✓	✓		Check if OK	N/A
6.3.1	Antenna radiated signal 15 Hz	✓	✓		Check if OK	N/A
	135 Hz	✓	✓		Check if OK	N/A
6.3.2	Antenna Speed	66.667	66.668		66.667 ± .133	ms
6.4.1.1	Correct identity code	✓	✓		Check if OK	N/A
6.4.1.2	Identity period	38.0 ✓	38.0		37.5 ± 3.75	Seconds
6.4.2	Peak power (1) Reading of peak power meter Pm =	76 mw	76 mw		N/A	Watts
	(2) Convert to dBm - 10 log Pm x 10^3 = Pm dBm	18.81 dBM	18.81 dBM		N/A	dBm
	Total power output in dBm PmdBm + P_L = *Insertion loss see 6.1 above.	50.01 dBM	50.01 dBM		50 dBm	dB
6.4.3.3	Pulse count	7187	7189		7200 ± 180	Counts
6.4.4.2	Pulse shape Width (50%)	3.6 us	3.6 us		3.5 ± 0.5	µs
	Rise time (10-90%)	2.2 us	2.1 us		2 ± 0.25	µs
	Fall time (90-10%)	2.5 us	2.5 us		2.5 ± 0.5	µs
6.4.4.4	Pulse spacing	12.0 ms	12.0 ms		12.0 ± 0.1	µs
6.1.5.2	Delay - 60 ±10 µs 15 Hz trig to first burst pulse.	✓	✓		Check if OK	

DATA SHEET

OPERATIONAL TESTS

AN/TRN-41 (Continued)

No.	Description	Pre Test	Test	Post Test	Requirements	Units
4.4.5.3	Correct north Burst - 12 pulse pairs spaced 30 ± 0.1 μs	✓	✓		Check if OK	
4.4.5.5	Delay 40 ± 10 μs - 135 Hz trig to first burst pulse	✓	✓		Check if OK	
4.4.5.6	Correct Aux burst - 6 pulse pairs spaced 24 ± 0.1 μs	✓	✓		Check if OK	
4.4.6.5	RT replies to 3600 interrogations	2508	2560		≥ 2310 (Counts/Second)	
4.4.5.7	Demand only mode - times to switch from ON to STBY within 70 seconds	✓	✓		Check if OK	L
4.4.6.8	STBY mode	✓	✓		Check if OK	
4.4.6.9	Demand Only mode - time to switch from STBY to ON ~~≤ 10~~ 20 sec 4/19/77	✓	✓		Check if OK	
4.4.6.10	ON AIR mode	✓	✓		Check if OK	
4.4.7.1	DME ONLY mode	✓	✓		Check if OK	
4.4.7.2	Switch from DME to TACAN	✓	✓		Check if OK	
4.4.8.1	Antenna Alarm - Within four seconds	✓	✓		Check if OK	
4.4.8.2	Alarm Reset	✓	✓		Check if OK	
4.4.8.3	RT Alarm - Within five seconds	✓	✓		Check if OK	
4.4.8.4	Alarm Reset	✓	✓		Check if OK	